Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled).

2. (Currently Amended) A method of blind identification of sources within a system including P sources and N receivers, comprising the steps of:

identifying the matrix of direction vectors of the sources from the information proper to the direction vectors $\mathbf{a}_p$ of the sources contained redundantly in the m=2q order circular statistics of the vector of the observations received by the N receivers,

[[The method according to claim 1,]] wherein the m = 2q order circular statistics are expressed according to a full-rank diagonal matrix of the autocumulants of the sources and a matrix representing the juxtaposition of the direction vectors of the sources as follows:

$$C_{m,x} = A_q\, \zeta_{m,s}\, A_q^{H}$$

where $\zeta_{m,s}$ = diag([$C^{1,1,\ldots,1}_{1,1,\ldots,1,s}, \ldots, C^{P,P,\ldots,P}_{P,P,\ldots,P,s}$]) is the full-rank diagonal matrix of the $m = 2q$ order autocumulants $C^{p,p,\ldots,p}_{p,p,\ldots,p,s}$ des sources, sized (P x P), and where A_q = $[a_1^{\otimes(q-1)} \otimes a_1^{*} \ldots\ldots a_p^{\otimes(q-1)} \otimes a_p^{*}]$, sized ($N^q$ x P) and assumed to be of full rank, represents the juxtaposition of the P column vectors $[a_p^{\otimes(q-1)} \otimes a_p^{*}]$.

3. (Currently Amended) The method according to claim [[1]] 2, further comprising the following steps:

a) [[:]] the building, from the different observation vectors $\boldsymbol{x}(t)$, of an estimate $\hat{\mathbf{C}}_{m,x}$ of the matrix of statistics $\boldsymbol{C}_{m,x}$ of the observations,

b) [[:]] decomposing a singular value of the matrix $\hat{\mathbf{C}}_{m,x}$, and deducing therefrom of an estimate $P;^\wedge$ of the number of sources P and a square root $\hat{\mathbf{C}}_{m,x}^{1/2}$ of $\hat{\mathbf{C}}_{m,x}$, in taking $\hat{\mathbf{C}}_{m,x}^{1/2} = \boldsymbol{E}_s |\boldsymbol{L}_s|^{1/2}$ where $|.|$ designates the absolute value operator, where $\boldsymbol{L}_s$ and $\boldsymbol{E}_s$ are respectively the diagonal matrix of the $P;^\wedge$ greatest real eigenvalues (in terms of absolute value) of $\hat{\mathbf{C}}_{m,x}$ and the matrix of the associated orthonormal eigenvectors;

c) [[:]] extracting, from the matrix $\hat{\mathbf{C}}_{m,x}^{1/2} = [\Gamma_1^{\mathrm{T}}, \ldots, \Gamma_N^{\mathrm{T}}]^{\mathrm{T}}$, of the N matrix blocks Γ_n : each block Γ_n sized $(N^{(q-1)} \times P)$ being constituted by the $N^{(q-1)}$ successive rows of $\hat{\mathbf{C}}_{m,x}^{1/2}$ starting from the "$N^{(q-1)}(n-1)+1$"th row;

d) [[:]] building of the $N(N-1)$ matrices $\Theta_{n1,n2}$ defined, for all $1 \leq n_1 \neq n_2 \leq N$, by $\Theta_{n1,n2} = \Gamma_{n1}^{\#}\ \Gamma_{n2}$ where # designates the pseudo-inversion operator;

e) [[:]] determining of the matrix $\boldsymbol{V}_{\mathrm{sol}}$, resolving the problem of the joint diagonalization of the N(N-1) matrices $\Theta_{n1,n2}$;

f) [[:]] for each of the P columns $\boldsymbol{b}_p$ of $\boldsymbol{A};^\wedge_q$, the extraction of the $K = N^{(q-2)}$ vectors $\boldsymbol{b}_p(k)$ stacked beneath one another in the vector $\boldsymbol{b}_p = [\boldsymbol{b}_p(1)^{\mathrm{T}}, \boldsymbol{b}_p(2)^{\mathrm{T}}, \ldots, \boldsymbol{b}_p(K)^{\mathrm{T}}]^{\mathrm{T}}$;

g) [[:]] converting said column vectors $\boldsymbol{b}_p(k)$ sized $(N^2 \times 1)$ into a matrix $\boldsymbol{B}_p(k)$ sized $(N \times N)$;

h) [[:]] joint singular value decomposition or joint diagonalization of the $K = N^{(q-2)}$ matrices $\boldsymbol{B}_p(k)$ in retaining therefrom, as an estimate of the column vectors of $\boldsymbol{A}$, of the eigenvector common to the –K matrices $\boldsymbol{B}_p(k)$ associated with the highest eigenvalue (in terms of modulus);

i) [[:]] repetition of the steps f) to h) for each of the P columns of $A;\hat{}_q$ for the estimation, without any particular order and plus or minus a phase, of the P direction vectors a_p and therefore the estimation, plus or minus a unitary trivial matrix, of the mixture matrix A.

4. (Currently Amended) The method according to claim [[1]] 2, wherein the number of sensors N is greater than or equal to the number of sources P and comprising a step of extraction of the sources, consisting of the application to the observations $x(t)$ of a filter built by means of the estimate $A;\hat{}$ of A.

5. (Previously Amended) The method according to claim 2, wherein $C_{m,x}$ is equal to the matrix of quadricovariance Qx and wherein m = 4.

6. (Previously Amended) The method according to claim 2, wherein $C_{m,x}$ is equal to the matrix of hexacovariance Hx and wherein m = 6.

7. (Currently Amended) The method according to claim [[1]] 2, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)] \qquad [[(17)]]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{|\boldsymbol{u}^H \boldsymbol{v}|^2}{(\boldsymbol{u}^H \boldsymbol{u})(\boldsymbol{v}^H \boldsymbol{v})} \qquad [[\ (18)]]$$

8. (Currently Amended) The use of the method according to claim [[1]] 2, for use in a communications network.

9. (Currently Amended) A use of the method according to claim [[1]] 2, for goniometry using identified direction vectors.

10. (Previously Presented) The method according to claim 2, wherein the number of sensors N is greater than or equal to the number of sources P and wherein the method comprises a step of extraction of the sources, consisting of the application to the observations $x(t)$ of a filter built by means of the estimate $A;^{\wedge}$ of A .

11. (Previously Presented) The method according to claim 3, wherein the number of sensors N is greater than or equal to the number of sources P and wherein the method comprises a step of extraction of the sources, consisting of the application to the observations $x(t)$ of a filter built by means of the estimate $A;^{\wedge}$ of A .

12. (Previously Presented) The method according to claim 3, wherein $C_{m,x}$ is equal to the matrix of quadricovariance Qx and wherein m = 4.

13. (Previously Presented) The method according to claim 4, wherein $C_{m,x}$ is equal to the matrix of quadricovariance Qx and wherein m = 4.

14. (Previously Presented) The method according to claim 3, wherein $C_{m,x}$ is equal to the matrix of hexacovariance Hx and wherein m = 6.

15. (Previously Presented) The method according to claim 4, wherein $C_{m,x}$ is equal to the matrix of hexacovariance Hx and wherein m = 6.

16. (Previously Presented) The method according to claim 2, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{\left|\boldsymbol{u}^H \boldsymbol{v}\right|^2}{\left(\boldsymbol{u}^H \boldsymbol{u}\right)\left(\boldsymbol{v}^H \boldsymbol{v}\right)}$$

17. (Previously Presented) The method according to claim 3, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{\left|\boldsymbol{u}^H \boldsymbol{v}\right|^2}{\left(\boldsymbol{u}^H \boldsymbol{u}\right)\left(\boldsymbol{v}^H \boldsymbol{v}\right)}$$

18. (Previously Presented) The method according to claim 4, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{|\boldsymbol{u}^H \boldsymbol{v}|^2}{(\boldsymbol{u}^H \boldsymbol{u})(\boldsymbol{v}^H \boldsymbol{v})}$$

19. (Previously Presented) The method according to claim 5, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{|\boldsymbol{u}^H \boldsymbol{v}|^2}{(\boldsymbol{u}^H \boldsymbol{u})(\boldsymbol{v}^H \boldsymbol{v})}$$

20. (Previously Presented) The method according to claim 6, comprising a step for the evaluation of the quality of the identification of the associated direction vector in using a criterion such that:

$$D(A, \hat{A}) = (\alpha_1, \alpha_2, \ldots\ldots, \alpha_P)$$

where

$$\alpha_p = \min_{1 \le i \le P} [d(\boldsymbol{a}_p, \hat{\boldsymbol{a}}_i)]$$

and where $d(\boldsymbol{u}, \boldsymbol{v})$ is the pseudo-distance between the vectors $\boldsymbol{u}$ and $\boldsymbol{v}$, such that :

$$d(\boldsymbol{u}, \boldsymbol{v}) = 1 - \frac{|\boldsymbol{u}^H \boldsymbol{v}|^2}{(\boldsymbol{u}^H \boldsymbol{u})(\boldsymbol{v}^H \boldsymbol{v})}$$